Risk factors for Sporadic *Campylobacter* Infections in Maryland

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Background: *Campylobacter* is the leading cause of bacterial diarrhea in the United States and among CDC's Foodborne Diseases Active Surveillance Network (FoodNet) sites. Data from FoodNet show that Maryland has a remarkably low incidence of culture-confirmed *Campylobacter* infections, where it is the third reported most common cause of diarrhea. In this analysis, we sought to examine risk factors for sporadic infection in Maryland to determine if differences in exposure may explain the difference between Maryland and other FoodNet sites.

Methods: Between March 1998 and February 1999, a Campylobacter case-control study was conducted in FoodNet sites (Connecticut, Georgia, Minnesota, Oregon, and selected counties in California, Maryland, and New York). A case was defined as a person with *Campylobacter* infection identified by a clinical laboratory; and diarrhea, with onset <10 days before the positive stool culture. Each case was matched with a control from the same age range and telephone exchange. Subjects were interviewed regarding diet, kitchen practices, travel, and animal exposure in the 7 days prior to illness onset (cases) or interview (controls). Risk factors among Maryland's cases and controls were compared using c2 analysis.

Results: Of 157 cases identified by surveillance in the Baltimore metropolitan area of Maryland, 119 were enrolled. The mean age of the cases was 35.6 years (range 2 months to 93 years); 17 (14.3%) cases were hospitalized. Cases were more likely than controls to be white ($p<0.01$), to have recently eaten in a restaurant ($p=0.01$), traveled internationally ($p=0.01$); eaten chicken luncheon meat ($p=0.03$), or ham ($p<0.01$); had contact with a puppy ($p=0.01$), dog ($p=0.03$) or cat ($p=0.02$); or visited a petting zoo ($p=0.04$). Cases were less likely than controls to have purchased ($p=0.01$), stored ($p=0.01$), or cooked ($p=0.01$) raw chicken. Cases who purchased chicken reported leakage from the package onto other items in their grocery bag more often than controls ($p<0.01$). The remainder of kitchen practices did not differ between groups.

Conclusions: Except for the handling of raw chicken, Maryland's site-specific analysis identified similar risk factors for *Campylobacter* infection as the analysis of FoodNet-wide data, and previously published reports, suggesting that exposure to poultry and animals, eating outside the home, and international travel are risk factors for disease. The reason for the unusually low incidence of *Campylobacter* infections in Maryland remains unexplained, but suggests exposure to contaminated chicken may be lower. Other factors, including those leading to identification of Campylobacter as the etiologic agent in a case of diarrhea, warrant further study to clarify the low incidence of Campylobacter infections in Maryland.

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